City of Oceanside
Beach Sand Replenishment & Retention Device Project

Public Information Session

Tuesday
September 15, 2020
6:00pm

Agenda

Welcome

Stacy Mueller, GHD

Purpose & Background

Kiel Koger, City of Oceanside

Technical Presentation

Brian Leslie, GHD

Q&A, Public Comment & Polling

Moderated session with panel from GHD & City of Oceanside responding

Closing Messages

Kiel Koger, City of Oceanside

Our Commitment as Participants

- Keep meeting purpose in mind
- Recognize diversity of perspectives
- Recognize future opportunities for dialogue

City of Oceanside

Beach Sand Replenishment & Retention Device Project

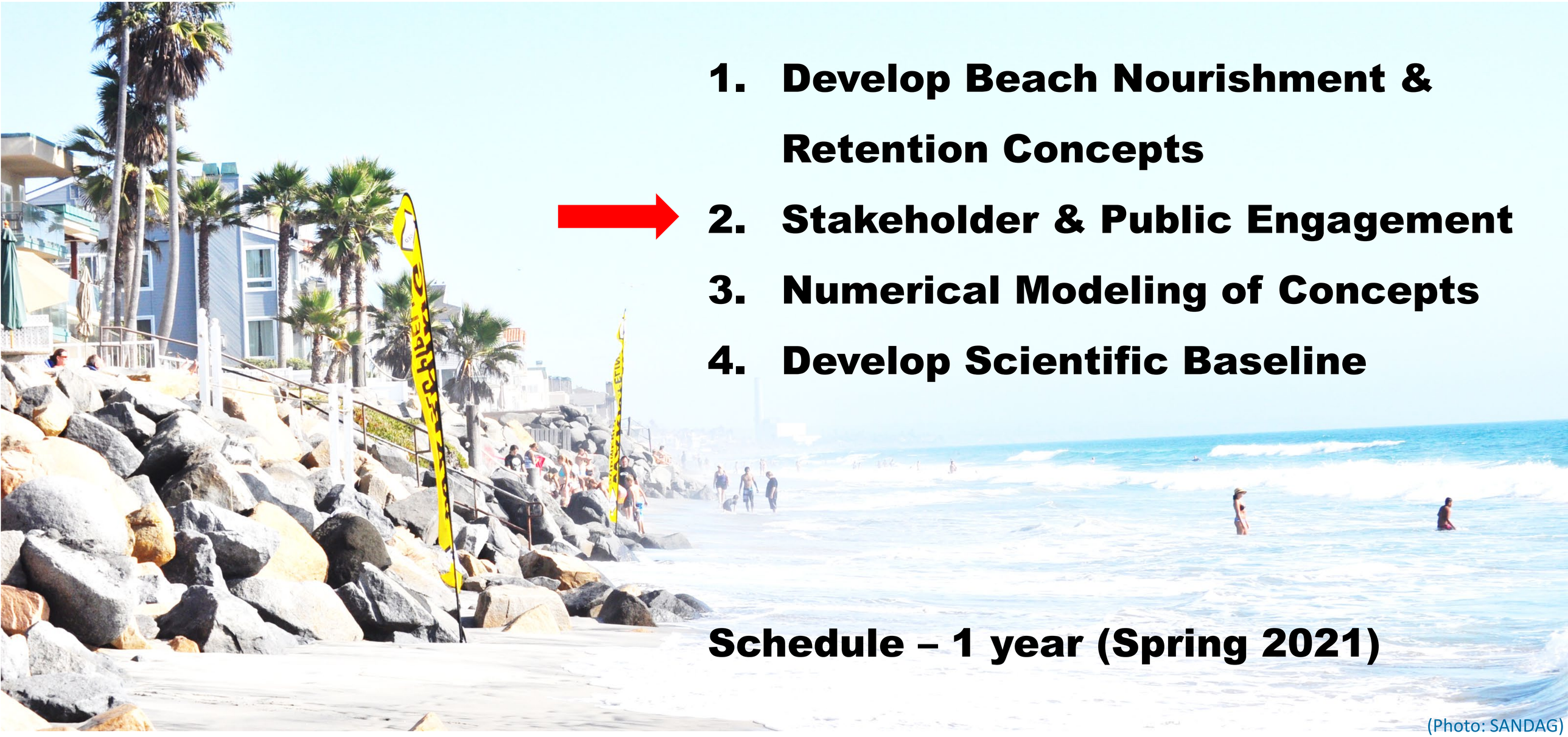
GHD

center for Climate Change Impacts and Adaptation

Pi Environmental

Public Workshop
September 15th, 2020

Feasibility Study Scope

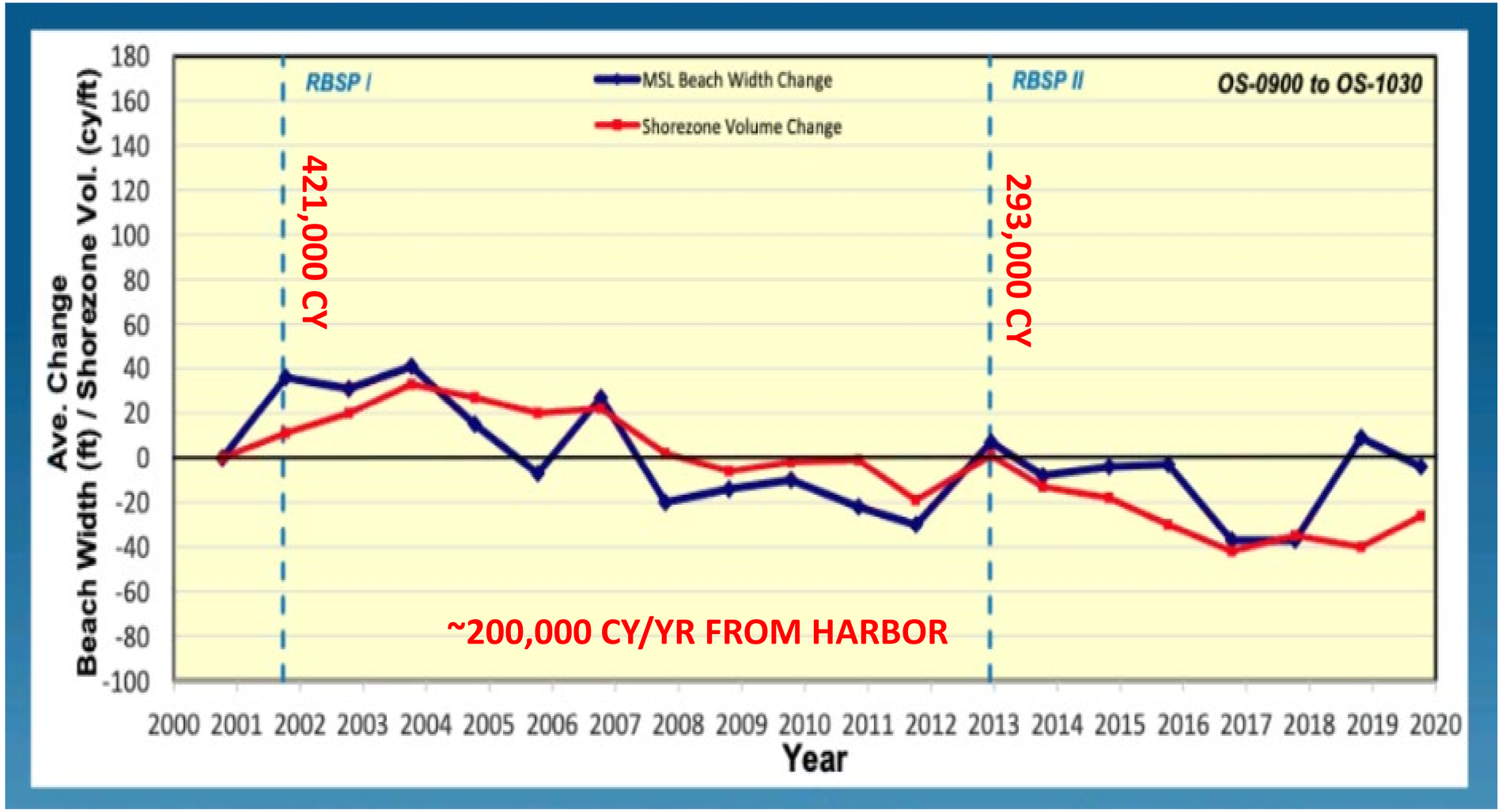


1. Develop Beach Nourishment & Retention Concepts
2. Stakeholder & Public Engagement
3. Numerical Modeling of Concepts
4. Develop Scientific Baseline

Schedule – 1 year (Spring 2021)

(Photo: SANDAG)

Problem – Chronic Beach Erosion



Source: CFC 2020

Problem

Summer Condition

Winter Condition
(source: NWS 2016)

Project Goals

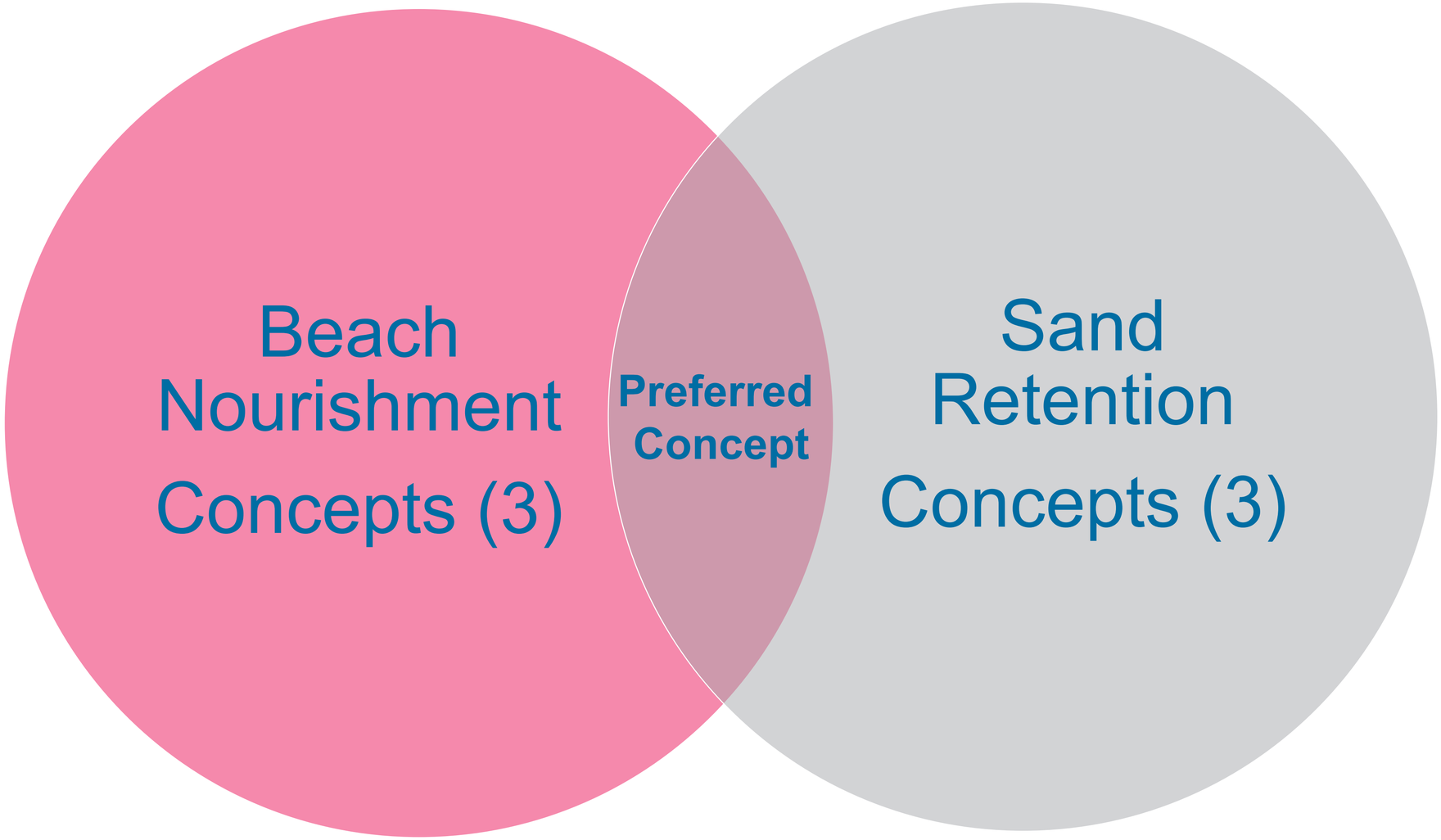
- Goals: Develop a beach nourishment/retention program that is:
  - Environmentally sensitive,
  - Financially feasible, and has
  - Reasonable chance of being approved

- Objectives:
  - ***Pilot project*** – start small and expand over time.
  - Project performance ***informed by scientific monitoring program***
  - Project shall be built such that it is ***adaptable & reversible***

Project Evaluation Criteria

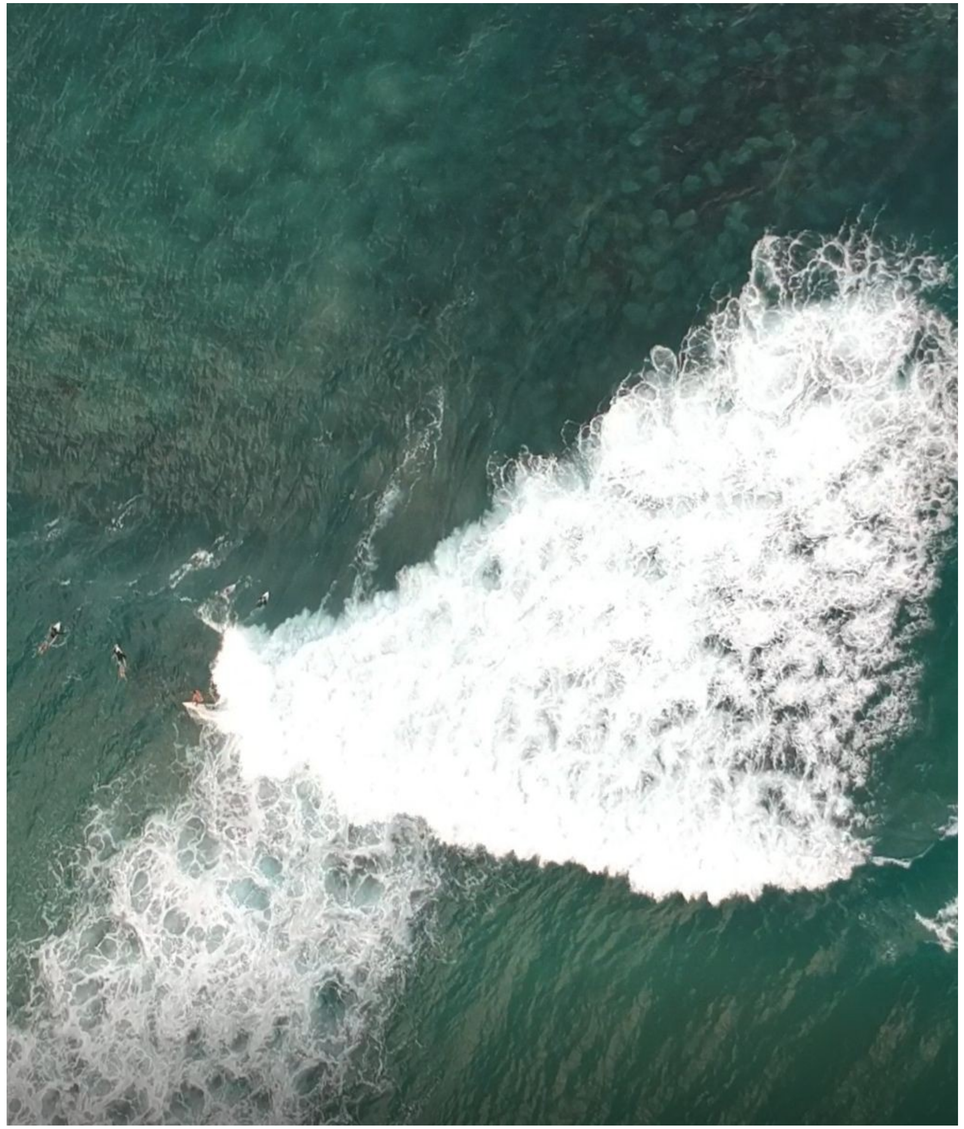
- Performance (i.e. Creation/retention of a Beach)
- Downdrift erosion impacts
- Surfing impacts
- Recreation
- Environmental Impacts
- Aesthetics
- Public Safety
- Costs (Initial & Lifecycle)

Project Concepts



Sand Retention (SR) Options

- SR-1 Multi-Purpose Artificial Reef
- SR-2 Groins
- SR-3 “South Jetty” Extension



SR 1 Multi-Purpose Artificial Reef

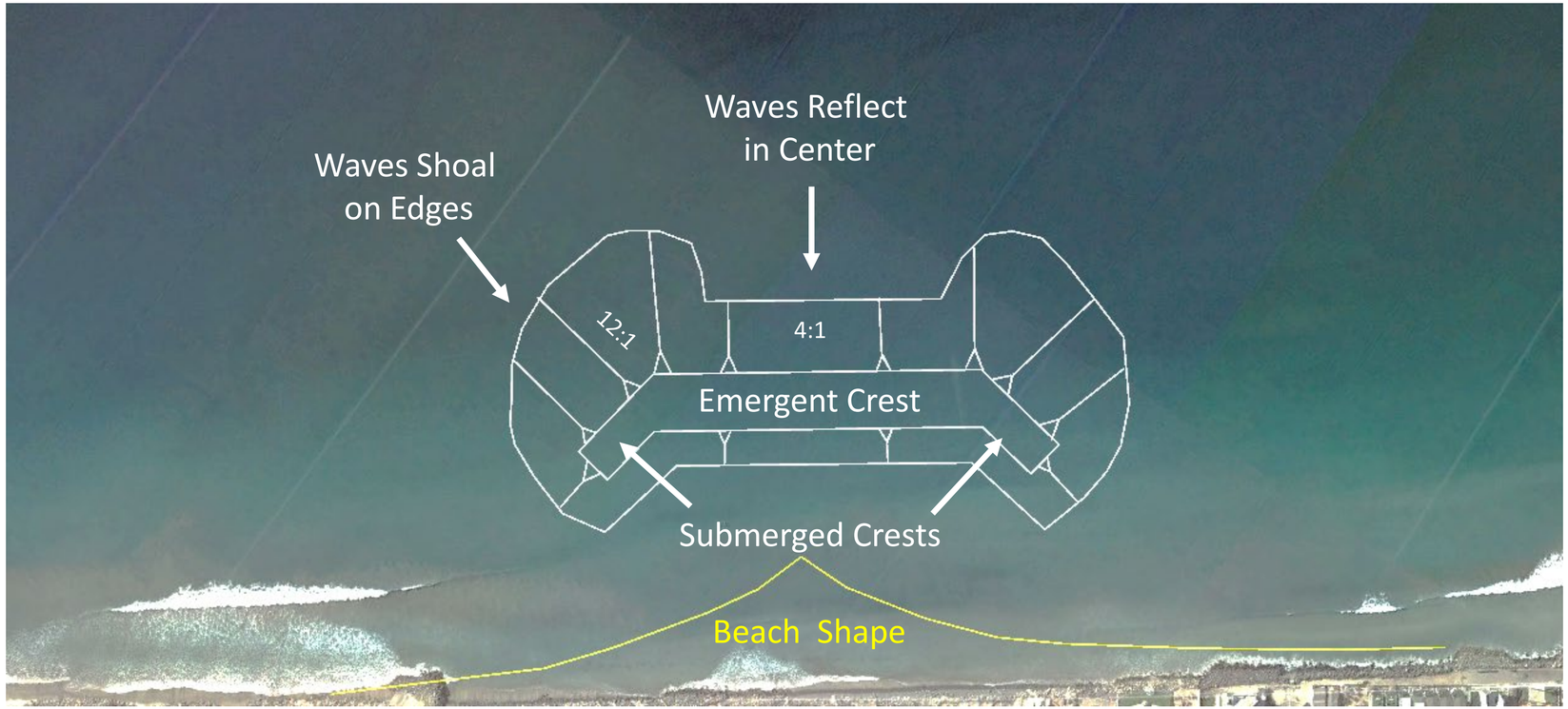
Design Inspiration - Palm Beach Artificial Reef, AUS

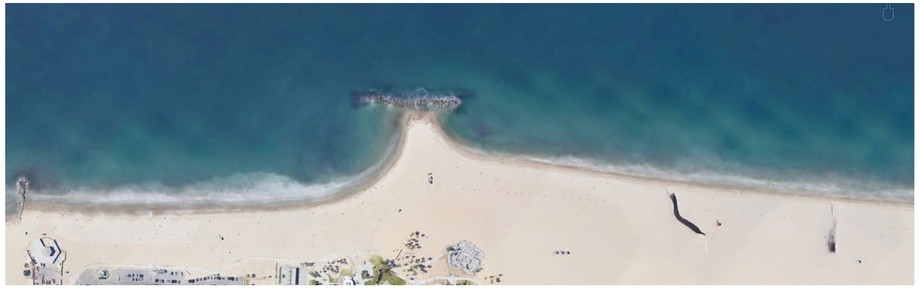
Features:

- Submerged offshore reef for beach stabilization and surfing
- 80,000 CY of 5-8T armor rock
- 615,000 CY Pre-fill nourishment
- Construction cost $12.5M USD
- Completed September 2019

SR 1 Multi-Purpose Art. Reef

Example Layout





Venice, CA

Proposed Features:

- Emergent, detached rubble mound breakwater with submerged edges
- ~1,000 ft long
- Promote salient formation in lee

Considerations:

- Sand prefill and bypassing needed
- Surfing improvements not a guarantee
- Nearshore currents – rips likely

SR 2 Groins

Design Inspiration

Source: Surfline.com

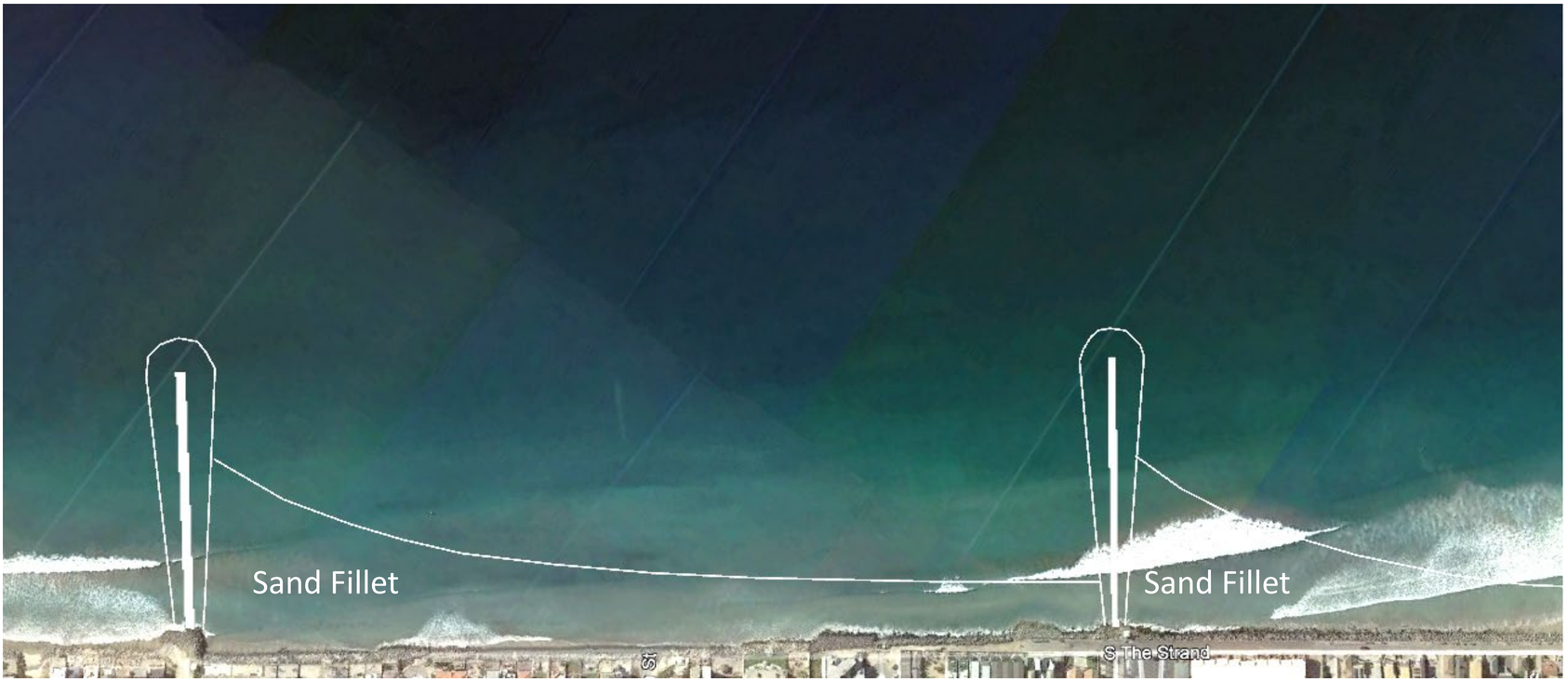
Newport Beach, CA

Source: Google Inc.

Carlsbad, CA

SR-2 Groins

Example Layout



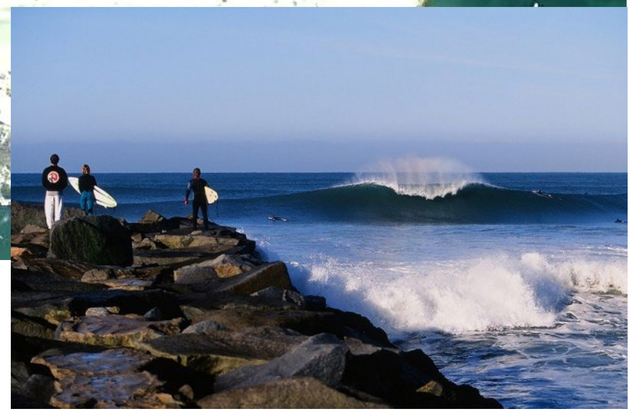
Features:

- Two groin pilot project
- ~400 to 600’ long rock groins
- ~1,500 ft spacing

Considerations:

- Sand prefill and bypassing needed
- Surfing impacts – positive or negative; difficult to predict
- Proven technique to retain sand in longshore transport dominant settings
- Localized beach widths variations seasonally
- Nearshore currents – localized rips likely

SR 3 "South Jetty" Extension



http://northcountysurf.blogspot.com/

Features:

- ~350’ rock extension of groin
- Capture sand before going into Entrance Channel

Considerations:

- Federal ownership of groin
- Sand doesn’t accrete where it’s needed most - Coupling with sand bypass program needed
- Surfing impacts difficult to predict - known surf spot

Any clarifying questions on sand retention options being considered?

Up next – 3 Beach Nourishment Options

Do you have Sand Retention Clarifying Questions?

Use the Q&A Feature to ask a question

- **Select Q&A**– look for the **Question Icon** on the right side or the bottom of the screen (or the **More Options Icon** for mobile device and then select Q&A) as shown below
- Type your question, select **All Panelists**, and select **Send**
- We may publish your question so that other attendees may view them

Question

More Options

Clarification of Sand Retention Options

SR-1 Multi-Purpose Artificial Reef

Submerged offshore reef for beach stabilization and surfing

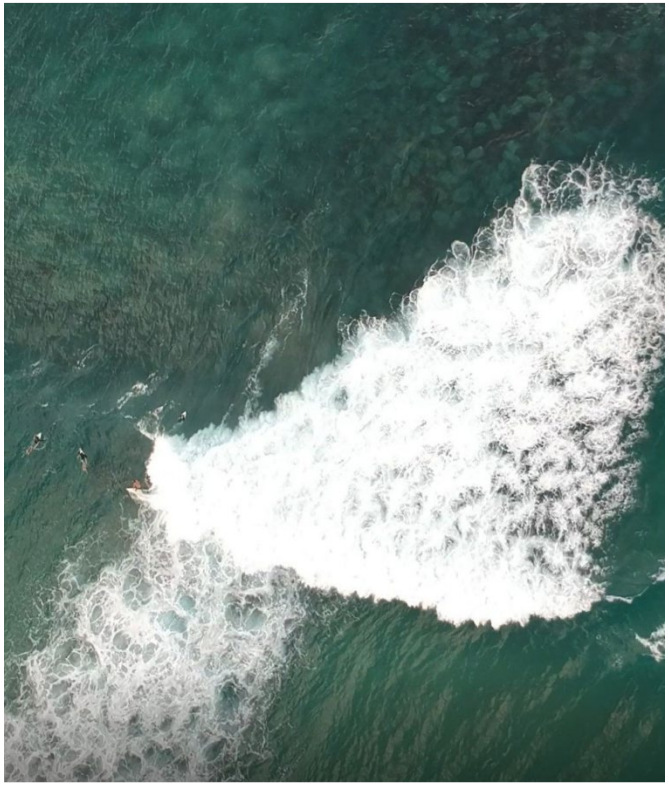
SR-2 Groins

Two groin pilot project

SR-3 “South Jetty” Extension

~350’ rock extension of groin

To capture sand before going into Entrance Channel



Beach Nourishment (BN) Options

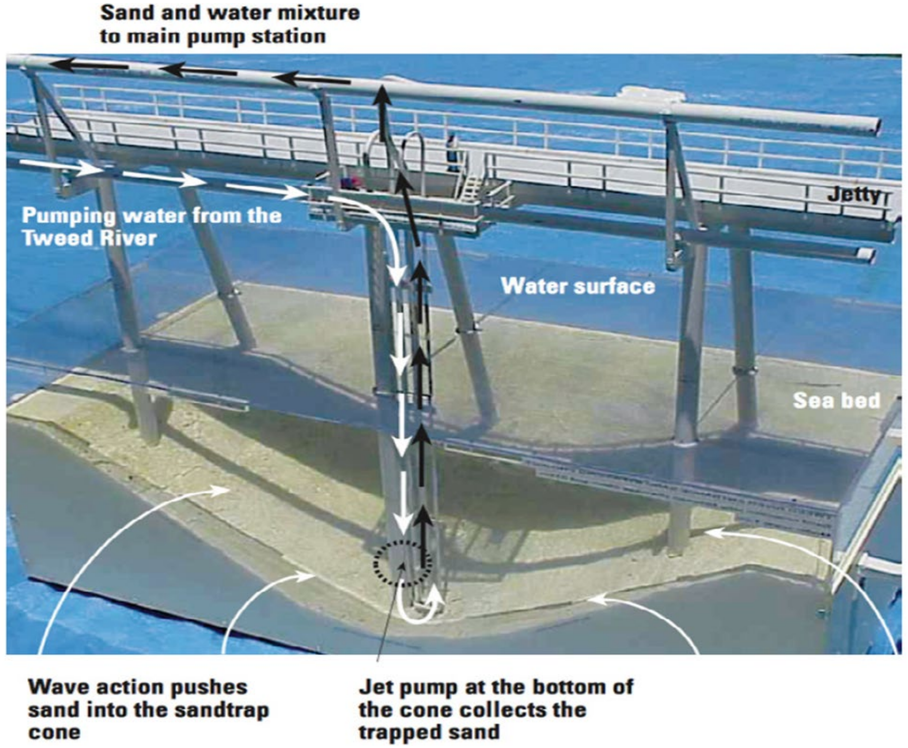
- BN-1 Fixed Bypass System
- BN-2 Mobile Bypass “Sand Shifter" System
- BN-3 Long-Term “Traditional” Nourishment Program

Option BN-1 Fixed Trestle Bypass

Design Inspiration – Tweed River, AUS

Features:

- 650,000 cy/year sand bypassed
- Capital construction cost of $36M USD (2001)
- Average annual cost of $5.2M USD

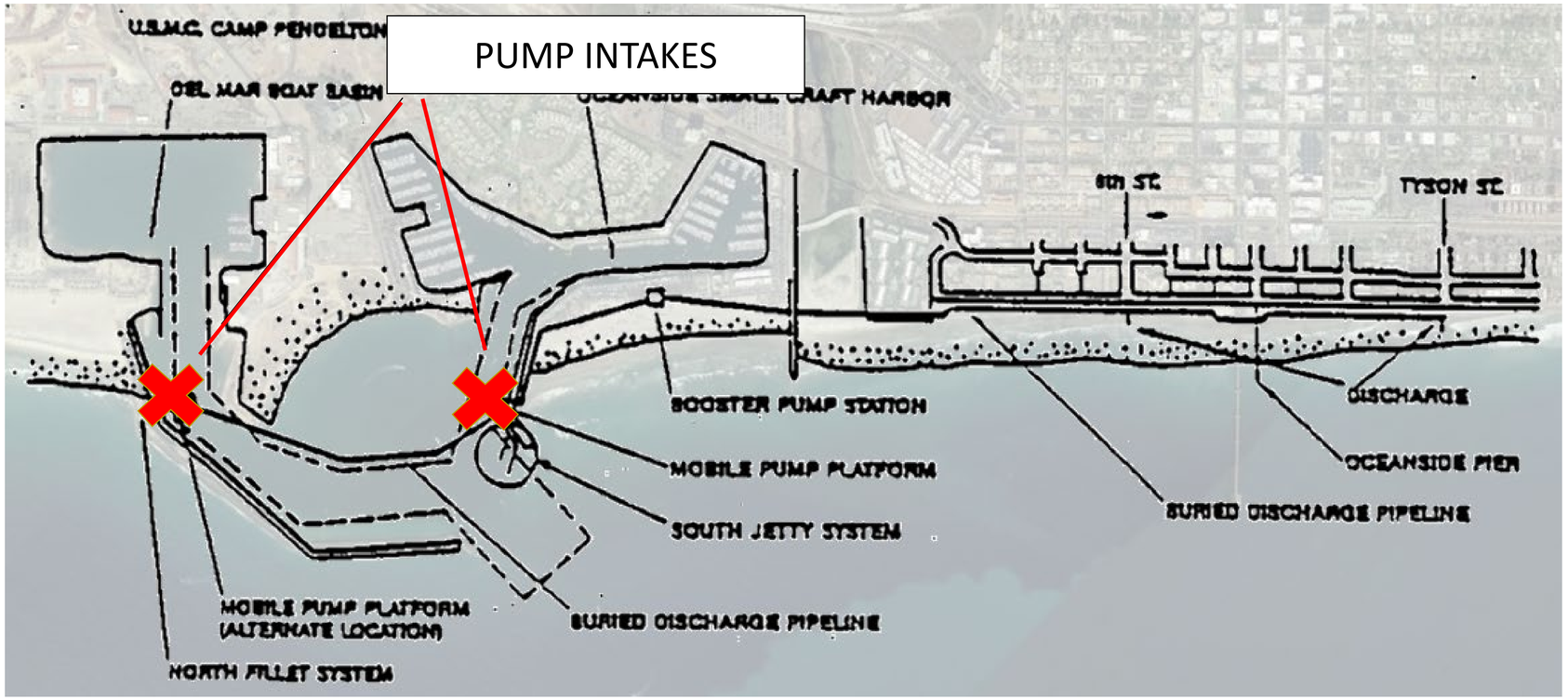


Option BN-1 Fixed Trestle Bypass

Example Layout

Option BN-1

Fixed Trestle Structure

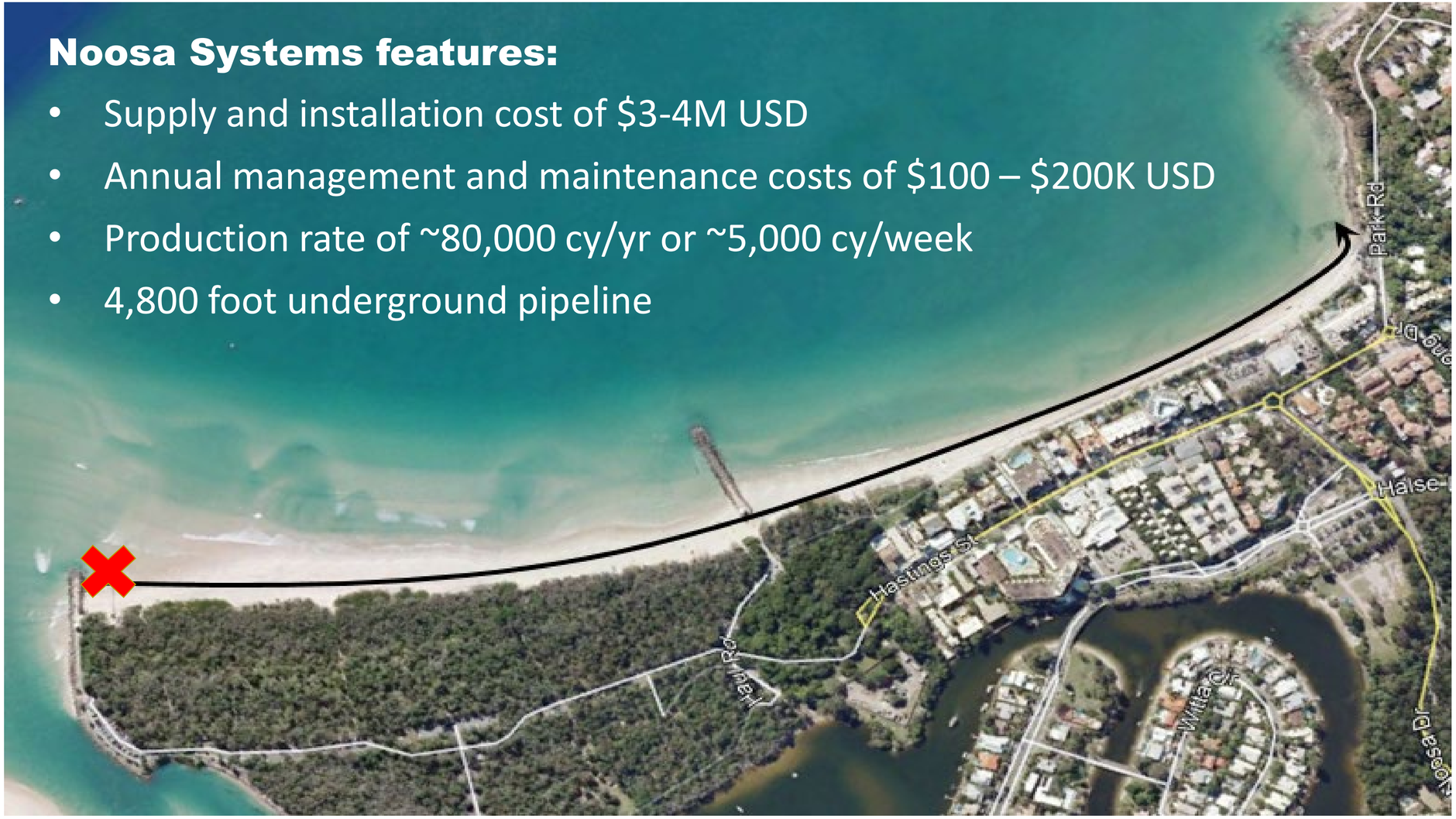


Oceanside Sand Bypass Pilot System circa 1980

Considerations:

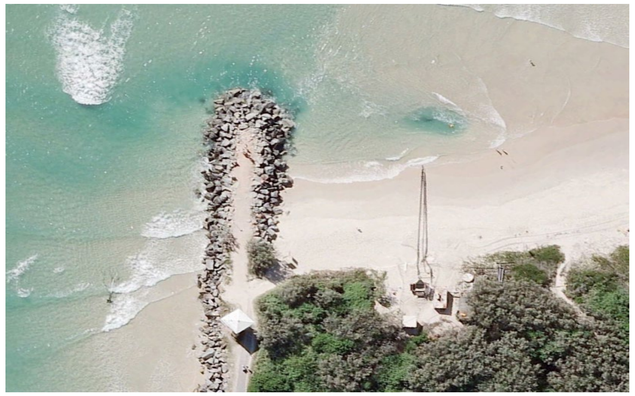
- Failure of Prior System
- Expensive
- Sand Transport from North and South
- Sand Mining from Camp Pendleton

BN-2 Mobile Bypass System “Sandshifter” Design Inspiration – Noosa, AUS



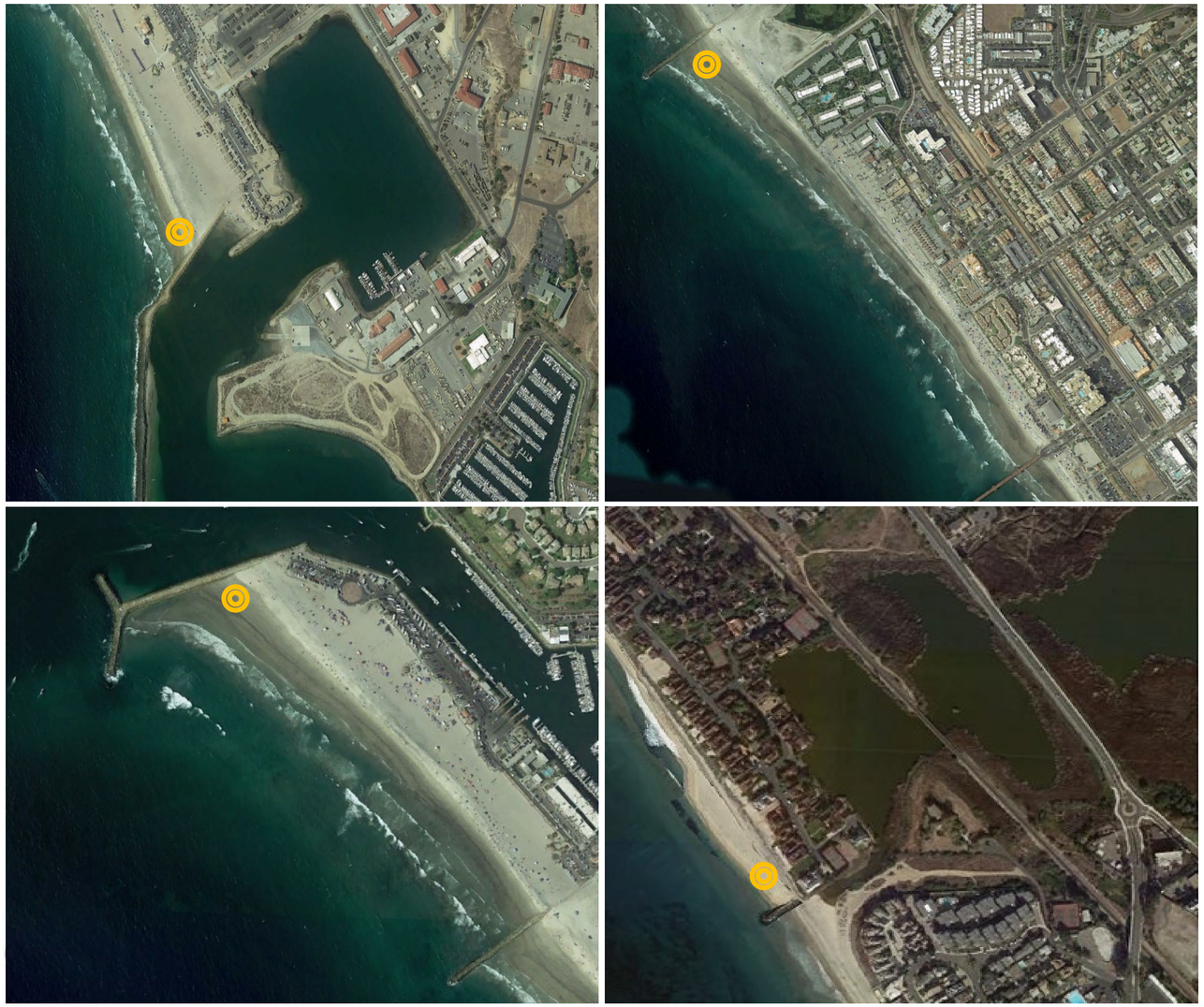
Noosa Systems features:

- Supply and installation cost of $3-4M USD
- Annual management and maintenance costs of $100 – $200K USD
- Production rate of ~80,000 cy/yr or ~5,000 cy/week
- 4,800 foot underground pipeline



BN-2 Mobile Sand Bypass Option

Sandshifter Option



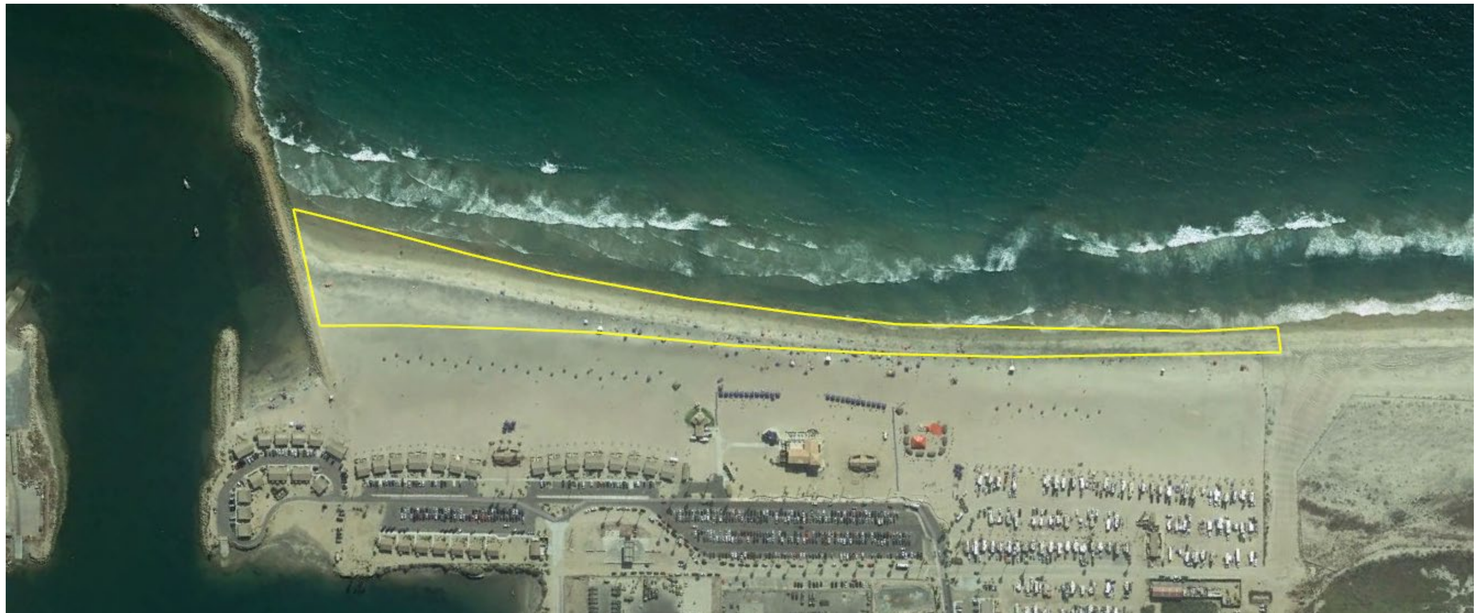
Features:

- Purchase & install supporting infrastructure for a Sandshifter system
- Redistribute/manage sand on City beaches - 80K CY/YR

Considerations:

- Low sand production rate
- Safety issues
- Historical problems with kelp may reduce productivity
- Lower funding commitment

BN-3 Long-term Nourish. Program



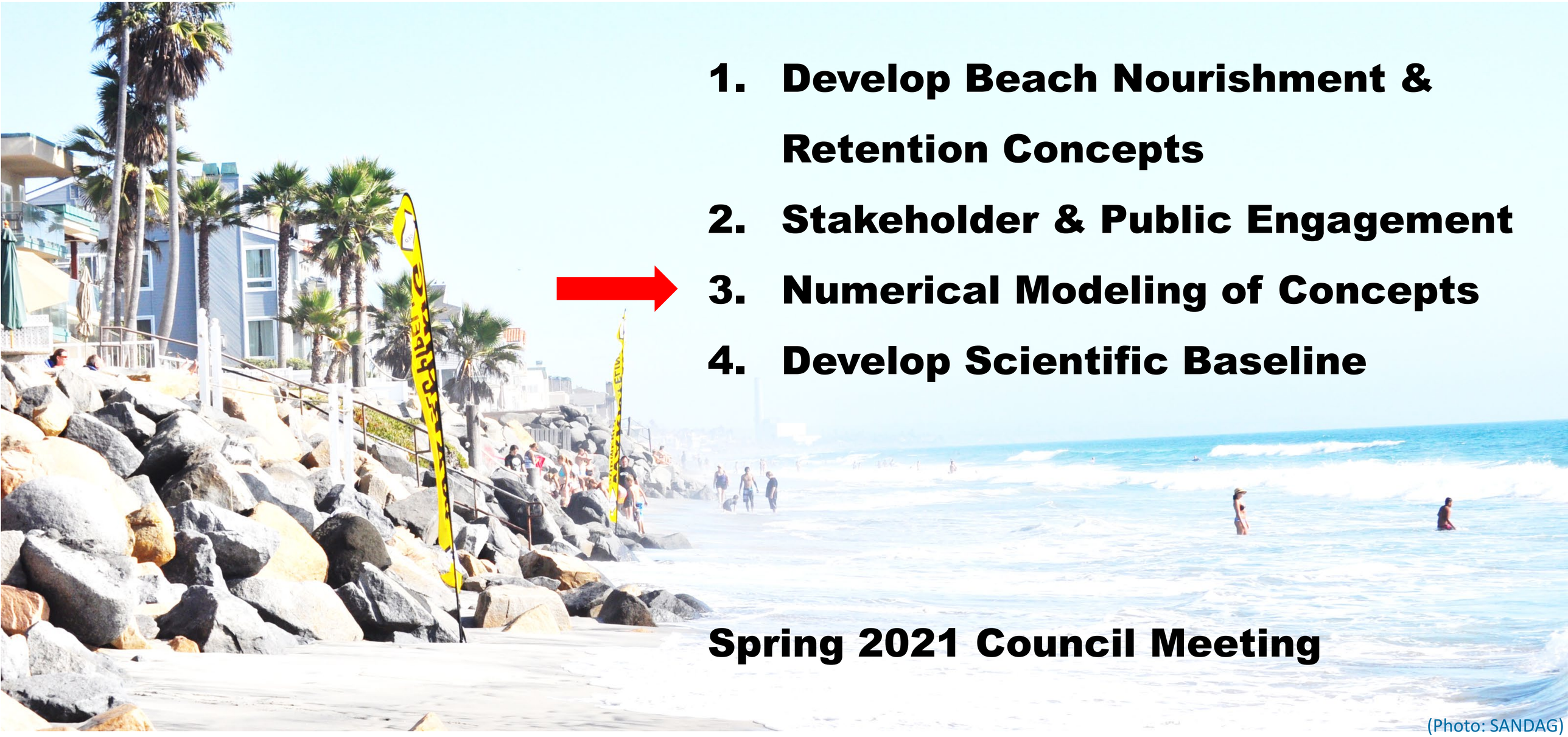
Features:

- Identification of funding and quality sand sources for long-term nourishment program
- Consider new sand sources (e.g. SLRR, Camp Pendleton, Offshore Borrows, Buena Vista Lagoon)
- Traditional dredging methods

Considerations:

- Volume of quality sand available (initially & long-term)
- Ownership of sand sources
- Environmental impacts of long-term program
- Expensive

Next Steps



1. Develop Beach Nourishment & Retention Concepts
2. Stakeholder & Public Engagement
3. Numerical Modeling of Concepts
4. Develop Scientific Baseline

Spring 2021 Council Meeting

(Photo: SANDAG)

Discussion

Summary of options being considered:

Sand Retention:

- SR-1 Artificial Reef
- SR-2 Groins
- SR-3 South Jetty Extension

Beach Nourishment:

- BN-1 Fixed Trestle Bypass System
- BN-2 Mobile Sand Bypass System
- BN-3 Alt. Nourishment Sources

(Photo: SANDAG)

Q&A | Comment Session

- We'll acknowledge receipt of questions and comments
- We may publish questions and comments so other attendees may view
- Please use appropriate language
- There are two ways to ask questions during this session: **Q&A** or **Raise Hand** features
- We may not be able to get to all those who wish to speak or respond to all questions
- We will alternate responding to questions submitted using both features

After tonight's event, please direct inquires to
Kiel Koger, Public Works Director
hkkoger@oceansideca.org
760.435.5089

Responding to Questions

City of Oceanside
• Kiel Koger, Public Works Director • Russ Cunningham, Principal Planner • Jonathan Borrego, Deputy City Manager
GHD
• Brian Leslie, Project Manager

Ask a Question / Provide Comment Using Q&A Feature

- **Select Q&A**– look for the **Question Icon** on the right side or bottom of the screen (or the **More Options Icon** for mobile device and then select Q&A) as shown below

- Type your question, select **All Panelists**, and select **Send**
  - You may identify who your question is for

Question

More Options

Ask a Question / Provide Comment Using Raise Hand Feature to Speak

- **Select Raise Hand**– look for the **More Options Icon** at the bottom of your screen (or the **Participant Icon** in the top right corner) as shown below

- **Check your audio settings**– look for the **More Options Icon** at the bottom of your screen and select **Use Computer** for audio or **Use Internet** for audio

- If called upon, you will have 2 minutes to state your name, organization, and ask your question or share your comment

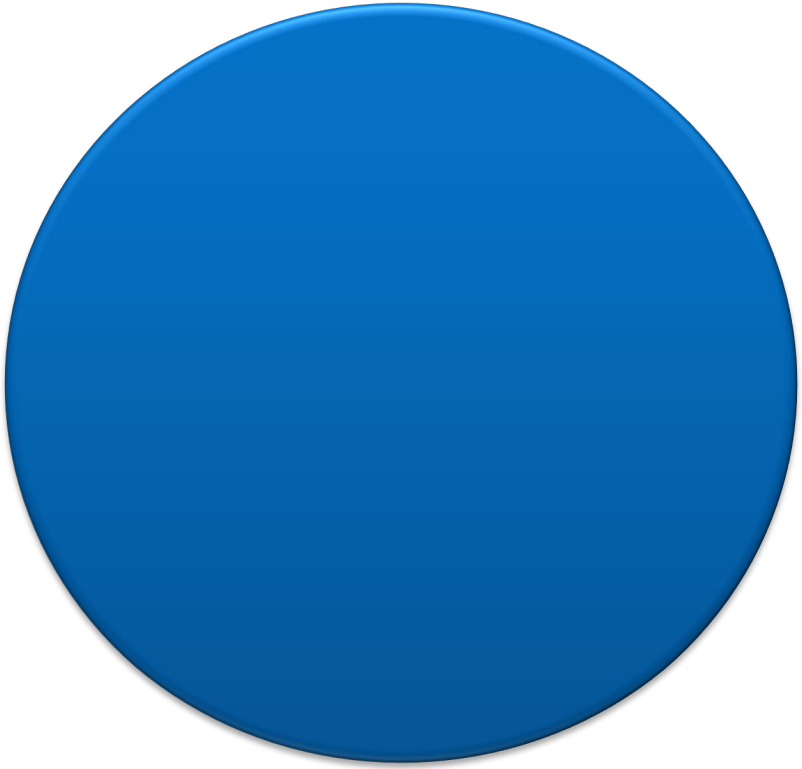
- After speaking, select **Lower Hand**

More Options

Participant

Raise Hand

Two Minute Speaker Time Remaining



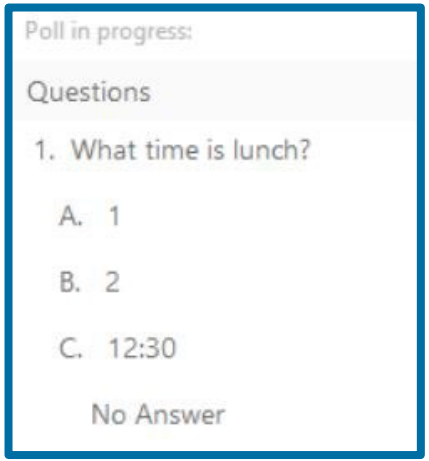
Discussion

Sand Retention
SR-1 Multi-Purpose Artificial Reef
SR-2 Groins
SR-3 “South Jetty” Extension
Beach Nourishment
BN-1 Fixed Bypass System
BN-2 Mobile Bypass “Sand Shifter” System
BN-3 Long-Term “Traditional” Nourishment Program

Polling Questions

- **Select Polling-** look for the **More Options Icon** at the bottom of your screen (or the **Participant Icon** in the top right corner) as shown below

- Click on **Polling** and answer the question



More Options

Participant

Polling

Question 1

Which of the following best describes how you most frequently enjoy the City of Oceanside beach areas?

(select one)

A. Active recreation activities (swimming, surfing, walking, running, etc.)

B. Passive recreation activities (beach days, fishing, playgrounds, etc.)

C. Coastal views & overlooks (piers, stairways, sidewalks)

D. Other

Question 2

I am a:

(select one)

A. Coastal resident of the City of Oceanside

B. Resident of the City of Oceanside

C. Non-resident of the City of Oceanside but value the beaches

D. None of these options apply to me

Question 3

Out of the sand retention options discussed tonight, which would you be most likely to support?

(select one)

A. SR-1 Multi-Purpose Artificial Reef

B. SR-2 Groins

C. SR-3 “South Jetty” Extension

D. A different option

E. I would like to learn more before selecting an option above

Question 4

Out of the three beach nourishment options discussed tonight, which would you be most likely to support?
(select one)

A. BN-1 Fixed Bypass System

B. BN-2 Mobile Bypass “Sand Shifter” System

C. BN-3 Long-Term “Traditional” Nourishment Program

D. A different option

E. I would like to learn more before selecting an option above

Question 5

Which location(s) do you think is (are) most appropriate for the sand retention pilot project?

(Select up to three options)

In the vicinity of:

A. Tyson Street

B. Wisconsin Avenue

C. Oceanside Boulevard

D. Buccaneer Beach

E. Cassidy Street

F. Different Locations

G. I would like to learn more before selecting a location above

Question 6

What project impacts are you most concerned about?

(select up to three options)

A. Surfing-related impacts
B. Downdrift Erosion
C. Sea Level Resilience
D. Environmental Impacts
E. Costs
F. Public Safety
G. Public Access
H. Other

Ask a Question / Provide Comment Using Q&A Feature

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More Options

Participant

Raise Hand

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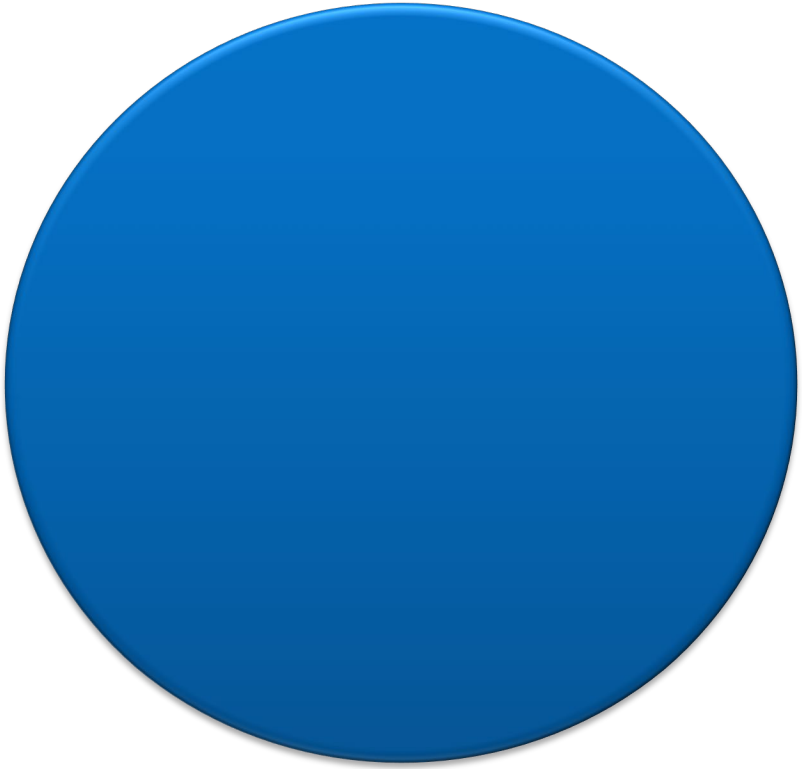

Discussion

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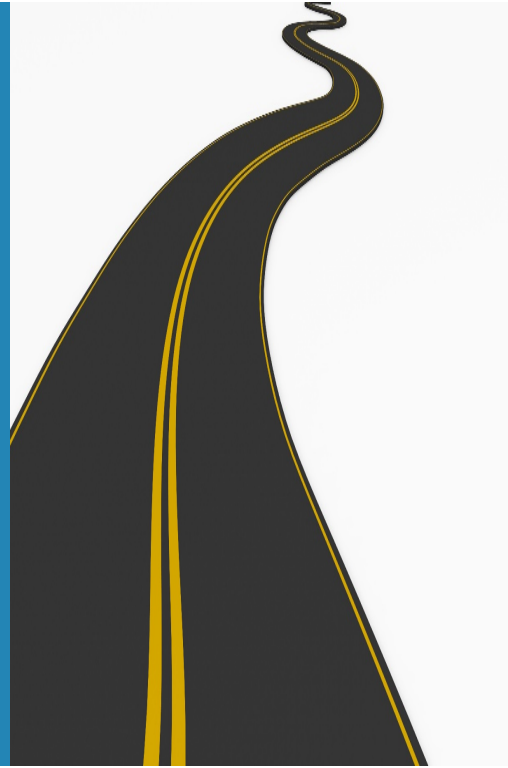
What's Next?

- Continue to engage stakeholders and resource agencies
- Prepare multi-criteria decision matrix for each concept to be run through
- Narrow concepts down to 1 option from each category (retention & nourishment/replenishment) and perform further analysis/numerical modeling
- Seek grant funds for next steps – final eng. and construction
- Bring draft report to City Council in Spring 2021 for more discussion before issuing final report



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Thank you for your interest and participation